

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 32

UNITED STATES PATENT AND TRADEMARK OFFICE

**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Ex parte DAREN YEO, PATRICK RAIOLA and KENNETH O. WOOD

Appeal No. 2002-1788
Application No. 09/217,667

ON BRIEF

Before STAAB, McQUADE, and NASE, Administrative Patent Judges.
NASE, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1 to 7, 9 to 24 and 40 to 46. Claim 8 has been objected to as depending from a non-allowed claim. Claims 25 to 39 have been withdrawn from consideration. No claim has been canceled.

We AFFIRM-IN-PART.

BACKGROUND

The appellants' invention relates to friction drive apparatus such as printers, plotters and cutters that feed strip material for producing graphic images and , more particularly, to a method for calibration of friction drive apparatus and a method for automatic alignment of strip material therein (specification, p. 1). A copy of the claims under appeal is set forth in the appendix to the appellants' brief.

Claims 1 to 7, 9, 11, 12, 14 to 16, 18 to 21, 23, 24 and 40 to 46 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 5,715,514¹ to Williams et al. (Williams).

Claims 10, 13, 17 and 22 stand rejected under 35 U.S.C. § 103 as being unpatentable over Williams.

Rather than reiterate the conflicting viewpoints advanced by the examiner and the appellants regarding the above-noted rejections, we make reference to the answer (Paper No. 26, mailed February 26, 2002) for the examiner's complete reasoning in support of the rejections, and to the brief (Paper No. 25, filed December 10, 2001) and

¹ Issued February 3, 1998 from an application filed on October 2, 1996.

reply brief (Paper No. 30, filed April 30, 2002) for the appellants' arguments thereagainst.

OPINION

In reaching our decision in this appeal, we have given careful consideration to the appellants' specification and claims, to the applied prior art reference, and to the respective positions articulated by the appellants and the examiner. As a consequence of our review, we make the determinations which follow.

The anticipation rejection

We sustain the rejection of claims 1, 2, 6, 7, 9, 11, 12, 14 to 16, 18 to 21, 23, 24 and 40 to 46 under 35 U.S.C. § 102(e) but not the rejection of claims 3 to 5.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. Verdegaal Bros. Inc. v. Union Oil Co., 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir.), cert. denied, 484 U.S. 827 (1987). The inquiry as to whether a reference anticipates a claim must focus on what subject matter is encompassed by the claim and what subject matter is described by the reference. As set forth by the court in Kalman v. Kimberly-Clark Corp., 713 F.2d 760, 772, 218 USPQ 781, 789 (Fed. Cir. 1983), cert.

denied, 465 U.S. 1026 (1984), it is only necessary for the claims to "'read on' something disclosed in the reference, i.e., all limitations of the claim are found in the reference, or 'fully met' by it."

Claims 1, 3, 14, 40 and 44 read as follows:

1. A friction drive apparatus for feeding a strip material in a longitudinal direction along a feed path for performing a work operation such as printing, plotting, or cutting, said strip material having a first longitudinal edge and a second longitudinal edge, said friction drive apparatus comprising:
 - a first friction wheel associated with said first longitudinal edge of said strip material;
 - a second friction wheel associated with said second longitudinal edge of said strip material;
 - a first motor drive for rotating said first friction wheel;
 - a second motor drive for rotating said second friction wheel;
 - a detection sensor for monitoring lateral position of said strip material, said detection sensor disposed behind said first friction wheel and said second friction wheel with respect to direction of motion of said strip material, said detection sensor generating a detection sensor signal;
 - a processor for controlling said first motor drive and said second motor drive independently, said processor receiving said detection sensor signal; and
 - means for automatically aligning said strip material with respect to said feed path upon loading of said strip material into said friction drive apparatus and prior to said work operation, said sheet material being automatically aligned based on said detection sensor signal.
3. The friction drive apparatus according to claim 1 wherein said apparatus further comprises:
 - a second sensor disposed on an opposite side of said friction wheels from said detection sensor, said second sensor generating a second sensor signal being received by said processor to automatically align said strip material with respect to said feed path when feed direction of said strip material is reversed.
14. A method for initially aligning a strip material in a friction drive apparatus, said method comprising the steps of:

placing a strip material into said friction drive apparatus; and
moving said strip material a predetermined aligning distance in a forward X-axis direction while steering said strip material with respect to a detection sensor to align said strip material in said X-axis direction prior to a plotting, printing or cutting operation based on input from said detection sensor.

40. A method for aligning a strip material in an apparatus for performing a work operation on said strip material, said strip material being advanced in an X-axis direction in a course of a work operation, said method comprising the steps of:

placing a strip material into said apparatus without precisely aligning said strip material in said X-axis direction;

establishing an initial Y-axis position of said strip material at an initial X-axis position using a detection sensor;

displacing said strip material a predetermined aligning distance forward in said X-axis direction;

establishing a second Y-axis position of said strip material at a second X-axis position using said detection sensor; and

moving said strip material within said apparatus to reduce misalignment of said strip material in said X-axis direction prior to performing said work operation, said misalignment being reduced based on input from said detection sensor.

44. A method of aligning sheet material in an apparatus, the apparatus having a drive mechanism for engaging and shifting the strip material in the course of a work operation performed by the apparatus on the strip material, comprising the steps of:

positioning the strip material in the apparatus in engagement with the drive mechanism without regard to a precise alignment of the strip material with the longitudinal direction;

moving the strip back and forth in the longitudinal direction by means of the drive mechanism;

measuring the lateral movement of the strip material at a given point in the apparatus, the lateral movement resulting from misalignment of the strip material and movement in the longitudinal direction, the lateral position of said strip material being monitored by a detection sensor; and

correcting the misalignment by shifting the strip material with the drive mechanism to reduce the lateral movement resulting from the misalignment during movement in the longitudinal direction prior to performing a work operation and based on input from said detection sensor.

Williams' invention relates generally to a sheet registration system, and more particularly concerns a system for calibrating a sheet registration device in a high speed printing machine. Figure 1 of Williams is a schematic elevational view depicting an illustrative electrophotographic printing machine² incorporating a sheet registration calibration device and Figure 2 is a detailed plan view of the sheet registration device.

Williams describes the method for registration of a sheet of paper (column 8, line 6, to column 10, line 22) as follows:

This invention describes a method to calibrate position sensors for use in paper registration. This enables inexpensive sensors to be used for highly accurate registration of paper. In addition, The procedure also calibrates for all repeatable errors resulting from wheel misalignment, wheel run-out, encoder miscentering, etc. High quality documents require registration of sheets of paper to the photoreceptor for image transfer. Accurate registration control locates the image consistently with respect to the edge of the paper.

FIG. 2 illustrates a method for registration of a sheet of paper. Nip 114 and Nip 116 impose velocities V1 and V2 to the paper, thus steering the paper. Appropriate velocity profiles can register the paper at datum 3 (D3) with proper position and orientation (zero skew). Methods for selecting the profiles as well as methods for servo control of the nips to impose these profiles are beyond the scope of this invention.

FIG. 2 shows a sheet of paper as it is entering the registration nip at datum 2 (D2). Leading edge sensor 124 notifies the controller that a sheet has entered the nip and time stamps the arrival for process direction registration. Paper lateral position and orientation (skew) are determined from measurements provided by edge sensors 132 and 134 [sic, 130 and 132]. With this information,

² The invention illustrated is a high speed black and white printing machine. Williams teaches (column 8, lines 2-5) that the invention is also very suitable for use in a high speed full color or highlight color printing machine where accurate sheet to image registration is critical.

the registration controller can generate the velocity profiles for registration at datum 3 (D3). The registration accuracy is evaluated at datum 3 (D3) with leading edge sensors 124, 126 (process direction) and edge sensors 132 and 134.

The accuracy of the registration depends on the accuracies of sensors 124, 126, 130, 132, 134 which measure the position of the paper upon entering of the nips. Candidate sensors to measure the lateral edge position use a light source and a detector. The shadow of the edge is imaged onto the detector and the amount of light measured by a photodiode is a function of the lateral edge position. The non-linearity, offset, temperature drift etc. affect the accuracy of the final registration at datum 3 (D3). This invention describes a method for substantially reducing these effects through in-situ real-time calibration.

When the paper arrives at datum 2 (D2) sensors 130 and 132 measure the lateral position of the paper edge. These values determine the lateral displacements required to have the paper registered when it arrives at datum 3 (D3). A request for these displacements is made to the steering algorithm which determines the appropriate nip velocity profiles. Sensor inaccuracies caused by nonlinearity, offset, gain errors, temperature drift, etc. cause inaccurate values to be reported to the steering algorithm. Ultimately this results in registration errors. This invention describes a method for overcoming this difficulty. The method involves an in-situ determination of a correction that is added to the measured sensor values before they are reported to the steering algorithm.

The details of the method for calibrating sensor 132 are described below. Calibration of sensor 134 proceeds in a similar manner.

Before describing the invention it is useful to introduce some definitions and notation.

X_2 is the actual lateral position of the paper at sensor 132 when the paper is at datum 2.

X_{s2} is the lateral position of the paper as measured by sensor 132 when the paper is at datum 2

X_{s3} is the lateral position of the paper measured by sensor 134 when the paper is at datum 3 The paper will be considered registered when $X_{s3} = 0$.

X_{s3} is the actual lateral position of the paper at sensor 134 when the paper is at datum 3.

X_{disp} is the requested lateral displacement of the paper as it moves from datum 2 to datum 3. If the sensors were perfect $X_{disp} = -X_{s2}$ would cause the paper to move to $X_{s3} = 0$.

$c(X_{s2})$ is the correction to be added to the measured sensor values. As the notation suggests, it is a function of the position on the sensor. This invention provides a method to determine this correction.

$e_2(X_{s2})$ and $e_3(X_{s3})$ are the sensor errors; the difference between the actual and measured paper position. These errors are a function of the position on the sensor.

From these definitions it follows that:

$$X_{s3} = X_3 + e_3(X_{s3}) \quad (1)$$

$$X_3 = X_2 + X_{disp} \quad (2)$$

$$X_{disp} = -(X_{s2} + c(X_{s2})) \quad (3)$$

$$X_2 = X_{s2} - e_2(X_{s2}) \quad (4)$$

Combining these relations, one obtains an expression that relates the sensor measurements to the sensor correction.

$$X_{s3} + c(X_{s2}) = e_3(X_{s3}) - e_2(X_{s2}) \quad (5)$$

What follows is a description of the method used to determine the correction $c(X_{s2})$ for a particular value of X_{s2} , call it X_{s2}^* . For complete sensor calibration this method is applied at several points along the sensor. To facilitate the explanation of the method consider the following thought experiment.

Feed paper to the lateral position X_{s2}^* . Randomly choose a value for the correction c and, using relation (3), determine X_{disp} . Perform the registration move, measure the resulting X_{s3} and calculate the value of the quantity $X_{s3} + c$. Repeat this procedure using various different values for the correction c . By doing this we have experimentally generated $X_{s3} + c$ as a function of c . Call this

function $F(c)$. But, from relation (5), $e_3(X_{s3}) - e_2(X_{s2}) = X_{s3} + c$. Therefore, for the point $X_{s2} = X_{s2}^*$: $F(c) = X_{s3} + c = e_3(X_{s3}) - e_2(X_{s2})$ and (5) yields

$$X_{s3} + c = F(c) \quad (6)$$

This expresses the relation between the correction c and the sensor measurement X_{s3} . Now as mentioned above, for proper registration we would like $X_{s3} = 0$. It can be shown that the value of c that achieves this result may be determined using the iteration

$$c_{i+1} = c_i + X_{s3i} \quad (7)$$

where the subscript i indicates that the parameter is associated with the i -th sheet of paper. The convergence conditions for this iteration are well known; in the current application convergence will not be an issue.

In the absence of noise the iteration (7) will yield the desired correction. In the presence of noise however, it should be modified to

$$C_{i+1} = c_i + b * X_{s3i} \quad 0 < b < 1 \quad (8)$$

It can be shown that the factor b has the effect of providing averaging which regulates the stability of the iteration. Smaller values of b increases both stability and the time required to calibrate the sensor.

The method for calibrating the sensor requires feeding sheets of paper to different lateral positions of sensors 132 and 134. The gamut of which must encompass the sensor range. This is difficult to do when feeding out of a paper feeder. A better method moves a single sheet of paper back and forth in the nips many times. On the return move, the nips position the sheet to different lateral positions and orientations at datum 2. This provides the initial conditions for the forward calibration move. The return move can be either deterministic or random. In the results below a random return move was chosen.

The above procedure can also be ganged to adjust the position of a sheet at a third location. The position of the sheet at a third location can be measured and the desired position at the second position can be adjusted accordingly so that the sheet is properly registered at the third location.

As described above, the calibration is a set-up procedure. The calibration may be updated continuously during actual document production. This compensates for drift.

In recapitulation, Williams provides a calibration system for a deskewing and registering device for an electrophotographic printing machine. The method includes

- a.) moving a sheet from a first position to a second position along a paper path;
- b.) sensing the position of the sheet at the first position and the second position;
- c.) choosing a correction value to cause the sheet to change a lateral position from the first position to the second position; and
- d.) repeating the moving, sensing, and choosing steps until a predetermined adjustment is made when moving the sheet from the first position to the second position to determine a proper calibration value.

In the anticipation rejection before us in this appeal, the examiner read claims 1 to 7, 9, 11, 12, 14 to 16, 18 to 21, 23, 24 and 40 to 46 on Williams as follows:

Williams et al. ('514) disclose a friction drive apparatus comprising a first friction wheel (116), a second friction wheel (114), a first and second motor drive, not shown, a processor for controlling the first and second motor drives independently at different speeds to correct a skewed feeding strip material and a detection sensor (134) and second sensor (130) disposed upstream and downstream of the first and second friction wheels (114, 116) for monitoring lateral position of said strip material (11). Williams et al. ('514) discloses a method of using the friction drive including sensing an initial position of the strip material (11) with the detection sensor (134) and the second and third lateral sensors (130, 132), moving the strip material (11) forward a predetermined

distance while correcting the lateral position and skew angle by driving the friction rolls (114, 116) at different speeds (V1, V2), sensing the lateral position of the strip material (11) with the sensors (130, 132, 134), and moving the strip material (11) in a reverse direction a predetermined distance while correcting the lateral position and skew angle by driving the friction rolls (114, 116) at different speeds (V1, V2). This process is repeated until the desired lateral position is reached and the skew angle is corrected. Williams et al. ('514) also discloses calibrating one of the sensors (130, 132, 134) relative to the other sensors. The calibration method includes the method of aligning set forth above and a predetermined number of forward and reverse movements are reached then a proper calibration value is determined to compensate for any discrepancies between the sensors.

Claim 1

The appellants argue (brief, pp. 4-5; reply brief, pp. 1-2) that claim 1 is not anticipated since (1) Williams does not align the sheet material based on input from only one detection sensor since Williams teaches uses a plurality of sensors (e.g., sensors 130, 132, 134, 126, 128) to align the sheet material; and (2) Williams does not disclose the detection sensor disposed behind the friction wheels.

The argument presented by the appellant does not convince us that the subject matter of claim 1 is novel over the teachings of Williams for the reasons that follow.

First, claim 1 is written in "comprising" format and recites "a detection sensor" that generates a detection sensor signal and that the sheet material is "automatically aligned based on said detection sensor signal." The term "comprising" is a term of art

used in claim language which means that the named elements are essential, but other elements may be added and still form a construct within the scope of the claim (i.e., the claim is of an open-ended construction). See In re Baxter, 656 F.2d 679, 686, 210 USPQ 795, 802 (CCPA 1981). As such, claim 1 is not limited to a single detection sensor that generates a detection sensor signal that is used to automatically align the sheet material. Thus, the limitation of claim 1 of "a detection sensor" that generates a detection sensor signal and that the sheet material is "automatically aligned based on said detection sensor signal" is readable on Williams' sensor 130 when the sheet material 11 is moving in the direction indicated in Figure 2 since the claim does not exclude additional sensors.

Second, Williams' sensor 130 is disposed behind the nips 114 and 116 (i.e., the friction wheels) with respect to the sheet material motion as clearly shown in Figure 2. As set forth in the appellants' disclosure (e.g., specification, p. 5), sensor 58 (shown in Figures 1-6 as being upstream of friction wheels 34 and 36 when the strip material 12 is moved in the feed direction indicated by feed path 24) is disposed behind the friction wheels 34 and 36 with respect to the strip material motion indicated by the arrow. Thus, we understand the claimed location of the detection sensor (i.e., "disposed behind said first friction wheel and said second friction wheel with respect to direction of motion of said strip material") to mean that the detection sensor is upstream from the

first and second friction wheels with respect to direction of motion of the strip material. With that understanding, it is clear to us that Williams' sensor 130 is upstream from the nips 114 and 116 (i.e., the friction wheels) with respect to direction of motion of the sheet material as clearly shown in Figure 2.

For the reasons set forth above, the decision of the examiner to reject claim 1 under 35 U.S.C. § 102(e) is affirmed.

Claims 2, 6, 7, 9, 11 and 12

The appellants have grouped claims 1, 2, 6, 7, 9, 11 and 12 as standing or falling together.³ Thereby, in accordance with 37 CFR § 1.192(c)(7), claims 2, 6, 7, 9, 11 and 12 fall with claim 1. Thus, it follows that the decision of the examiner to reject claims 2, 6, 7, 9, 11 and 12 under 35 U.S.C. § 102(e) is also affirmed.

Claim 3

The appellants argue (brief, p. 6; reply brief, p. 2) that claim 3 is not anticipated since Williams does not teach a second sensor disposed on an opposite side of the friction wheels generating a second sensor signal for automatically align the strip

³ See page 3 of the appellants' brief.

material with respect to the feed path when the feed direction of the strip material is reversed.

The argument presented by the appellant convinces us that the subject matter of claim 3 is novel over the teachings of Williams. In that regard, while Williams does teach (column 10, lines 5-14) that in the better method for calibrating the sensors a single sheet of paper is moved back and forth in the nips many times and that the return move can be either deterministic or random, we fail to find any teaching in Williams that sensor 134 generates a second sensor signal which is received by controller 29 to automatically align the sheet of paper with respect to the feed path when the feed direction of the sheet of paper is reversed.

Since all the limitations of claim 3 are not taught by Williams for the reasons set forth above, the decision of the examiner to reject claim 3 under 35 U.S.C. § 102(e) is reversed.

Claims 4 and 5

Claims 4 and 5, which depend from claim 3, fall with claim 3. Thus, it follows that the decision of the examiner to reject claims 4 and 5 under 35 U.S.C. § 102(e) is also reversed.

Claim 14

The appellants argue (brief, p. 6; reply brief, pp. 1-2) that claim 14 is not anticipated since (1) Williams does not disclose aligning the strip material based on input from only one detection sensor since Williams teaches uses a plurality of sensors (e.g., sensors 130, 132, 134, 126, 128); and (2) Williams does not disclose aligning the strip material with respect to the detection sensor while steering the strip material.

The argument presented by the appellant does not convince us that the subject matter of claim 14 is novel over the teachings of Williams for the reasons set forth above with respect to claim 1. In addition, Williams does align the strip material (e.g., sheet 11) with respect to the detection sensor (i.e., sensor 130) while steering the strip material (by controlling the drive to each drive nip 114 and 116 so as to align the sheet 11).

For the reasons set forth above, the decision of the examiner to reject claim 14 under 35 U.S.C. § 102(e) is affirmed.

Claims 15, 16, 18 to 21, 23 and 24

The appellants have grouped claims 14 to 16, 18 to 21, 23 and 24 as standing or falling together.⁴ Thereby, in accordance with 37 CFR § 1.192(c)(7), claims 15, 16, 18 to 21, 23 and 24 fall with claim 14. Thus, it follows that the decision of the examiner to reject claims 4 and 515, 16, 18 to 21, 23 and 24 under 35 U.S.C. § 102(e) is also affirmed.

Claim 40

The appellants argue (brief, pp. 6-7) that claim 40 is not anticipated since Williams does not disclose (1) a friction drive apparatus that reduces misalignment of sheet material based on input from only one detection sensor since Williams teaches uses a plurality of sensors (e.g., sensors 130, 132, 134, 126, 128); (2) aligning the sheet material with the sheet material being advanced in the X-axis direction; and (3) apparatus that aligns the strip material after the strip material is placed without being precisely aligned.

The argument presented by the appellant does not convince us that the subject matter of claim 40 is novel over the teachings of Williams for the reasons set forth above with respect to claim 1. In addition, Williams specifically teaches (column 8, lines

⁴ See page 3 of the appellants' brief.

15-51) that nips 114 and 116 impose appropriate velocity profiles V1 and V2 to the paper, thus steering the paper so that the paper is registered at datum 3 (D3) with proper position and orientation (zero skew). Thus, Williams does aligns the paper while the paper is being advanced in the X-axis direction after the paper has been placed without being precisely aligned.

For the reasons set forth above, the decision of the examiner to reject claim 40 under 35 U.S.C. § 102(e) is affirmed.

Claims 41 to 43

The appellants have grouped claims 40 to 43 as standing or falling together.⁵ Thereby, in accordance with 37 CFR § 1.192(c)(7), claims 41 to 43 fall with claim 40. Thus, it follows that the decision of the examiner to reject claims 41 to 43 under 35 U.S.C. § 102(e) is also affirmed.

Claim 44

The appellants argue (brief, pp. 7-8) that claim 44 is not anticipated since Williams does not disclose (1) a friction drive apparatus that corrects misalignment of sheet material based on input from only one detection sensor; and (2) aligning the

⁵ See page 3 of the appellants' brief.

sheet material after placing the sheet material into the apparatus without regard to precise alignment of the sheet material in the longitudinal direction.

The argument presented by the appellant does not convince us that the subject matter of claim 44 is novel over the teachings of Williams for the reasons set forth above with respect to claims 1 and 40. As stated above, Williams does align the paper after placing the paper into the apparatus without regard to precise alignment of the paper in the longitudinal direction.

For the reasons set forth above, the decision of the examiner to reject claim 44 under 35 U.S.C. § 102(e) is affirmed.

Claims 45 and 46

The appellants have grouped claims 44 to 46 as standing or falling together.⁶ Thereby, in accordance with 37 CFR § 1.192(c)(7), claims 45 and 46 fall with claim 44. Thus, it follows that the decision of the examiner to reject claims 45 and 46 under 35 U.S.C. § 102(e) is also affirmed.

⁶ See page 3 of the appellants' brief.

The obviousness rejection

We sustain the rejection of claims 10, 13, 17 and 22 under 35 U.S.C. § 103.

In the obviousness rejection before us in this appeal, the examiner stated
(answer, pp. 4-5):

With respect to claims 10 and 17, Williams et al. ('514), as advanced above, do not disclose a positioning the first sensor along an edge of a stripe disposed on the underside of the strip material. The use of a stripe or other indicia to locate and align strip material is well known. It would have been obvious to one of ordinary skill in the art to provide Williams et al. ('514) with strip material with a stripe and align the sensors to sense the position of the stripe when the edge of the material is not detectable with the optical sensors, i.e. with clear translucent strip material.

With respect to claims 13 and 22, Williams et al. ('514), as advanced above, do not disclose a sensor stop for positioning said longitudinal edge of said strip material (11). Guides or stops for guiding and aligning a first edge of a strip material are well known. It would have been obvious to one of ordinary skill in the art to provide Williams et al. ('514) with sensor stops for aligning the strip material over the sensors to allow the sensors to work properly.

The appellant argues (brief, p. 9) that

Claims 10 and 13 depend from Claim 1 and recite additional limitations thereto. Williams does not render Claims 10 and 13 of the present invention obvious since Williams does not teach or even suggest aligning the sheet material with respect to a detection sensor based on the detection sensor signal. Claims 10 and 13 of the present invention, in combination with Claim 1, specifically recite that the detection sensor generates a detection sensor signal that is received by the processor to automatically align the strip material with respect to the feed path prior to a work operation based on the detection sensor signal. Rather, Williams teaches that five sensors (130, 132, 134, 126, 128) disposed at various locations are used to align the sheet material. Therefore,

Williams does not render Claims 10 and 13 of the present invention obvious. Thus, rejection of Claims 10 and 13 under 35 U.S.C. § 103(a) should be withdrawn and Claims 10 and 13 passed to issue.

Claims 17 and 22 depend from Claim 14 and recite additional limitations thereto. Claim 14 of the present invention recites a method for initially aligning a strip material in a friction drive apparatus including the steps of placing the strip material into the friction drive apparatus and moving the strip material a predetermined aligning distance in a forward X-axis direction while steering the strip material with respect to a detection sensor to align the strip material in the X-axis direction. prior to a work operation based on input from detection sensor.

In contrast to Claims 17 and 22 of the present invention, Williams does not teach aligning the strip material with respect to a detection sensor based on input therefrom. Williams also does not teach aligning the strip material while steering the strip material. Rather, Williams moves, then checks alignment. Thus, Claims 17 and 22 are not rendered obvious by Williams. Therefore, rejection of Claims 17 and 22 under 35 U.S.C. § 103(a) should be withdrawn and Claims 17 and 22 passed to issue.

The above-noted argument advanced by the appellant does not convince us that the examiner's determination of the obviousness of claims 10, 13, 17 and 22 under 35 U.S.C. § 103 was in error. This argument is unpersuasive for the reasons expressed above with respect to independent claims 1 and 14. In addition, we note that the appellant has not challenged the specific determinations of obviousness made by the examiner in this rejection under 35 U.S.C. § 103.

For the reasons set forth above, the decision of the examiner to reject claims 10, 13, 17 and 22 under 35 U.S.C. § 103 is affirmed.

CONCLUSION

To summarize, the decision of the examiner to reject claims 1, 2, 6, 7, 9, 11, 12, 14 to 16, 18 to 21, 23, 24 and 40 to 46 under 35 U.S.C. § 102(e) is affirmed; the decision of the examiner to reject claims 3 to 5 under 35 U.S.C. § 102(e) is reversed; and the decision of the examiner to reject claims 10, 13, 17 and 22 under 35 U.S.C. § 103 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED-IN-PART

LAWRENCE J. STAAB
Administrative Patent Judge

JOHN P. McQUADE
Administrative Patent Judge

JEFFREY V. NASE
Administrative Patent Judge

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